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DATA FROM DEMIGRE REPORTS
ON PRISON PREWAR USSR ELECTRIC POWER SUPPLY

This report consists of excerpts from articles by those emigres from the USSR writing as authors "N," "O," and "P," who formerly worked in the field of electric power. The articles were compiled and issued by the East European Fund, later under the English title "Electrification Plans and the Deficiency of Electric Power for Industry in the Soviet Union." No dates were mentioned in the articles, but apparently the data is all prewar.

About 85 percent of the construction work on electric power stations has been done on a piecework basis. According to a report by Glavenergo (Main Electric Power Administration), local fuels were used in the production of about 67.8 percent of all electric power. The Suyevskaya GRES (the best thermal electric power station in the USSR) used 0.514 kilogram of standard fuel to produce one kilowatt-hour in 1949.

The TETs (steam heat & electric power stations), built in cities usually had a maximum capacity of 6,000, 12,000, 24,000, or 48,000 kilowatts. In Moscow, Leningrad, grad., Kiev, and other large cities, they usually had a capacity of 24,000 or 48,000 kilowatts.

Construction of small electric power stations with capacities of 5,000 kilowatts and under are not included in Five-Year Plans. They are usually included in the budget estimates of the cities or the enterprises which are to be served by them.

High-voltage transmission lines are usually of 110,000, 154,000, and 220,000 volts; the low-voltage ones are 12,000, 6,000, and 3,000 volts. The fluctuations allowed in the voltage delivered to different branches of industry, expressed in percentages, are as follows:

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Special industries	From From +0.45 to + 0.5
Chemical industries	From From +0.3 to ± 5
Metal Metallurgy	From From +1.5 to ± 7
Coal Coal industry	From From +1.5 to ± 10
Municipal needs	From From +1.0 to ± 12

As far as far as the frequency is concerned, no fluctuation was officially allowed, although it is sometimes dropped from 50 cycles to 48 cycles at peak loads.

Prices charged for electric power produced by TES (steam-electric power stations) or GES (hydroelectric power stations) are the same, and are not based on actual cost. They are artificially lowered for special and military industries, increased for light industries, and further increased for private consumers. [Autho]r [06] states here that detailed price schedules can be supplied by him upon request. The prices are roughly as follows:

<u>Price Price(kopeks per kw)</u>	<u>Cost Cost of Installed Capacity (rubles per yr)</u>
For heavy industries: 11-11	110-13110-130
For light industries: 10-15	175-18175-190
Private consumers: 23-36	180-21182-210

During the pre-war years, not a single power system in the USSR could produce a sufficient quantity of power to meet the demand. The power was rationed during peak-load hours, and working hours in industrial enterprises were changed to distribute the load evenly during a 24-hour day. In the Gridneprovskaya, Leningradskaya, Gruzinskaya, Armenian, Tashkentskaya, and Banskob-Miner Mineral'nyyodskaya systems, the situation was still worse; GES in these systems could not operate a sufficient number of hours per year because of seasonal water shortages. In the Dneprovskaya System, where GES prevailed, the average daily capacity fluctuated between 560,000 kilowatts and 200,000 kilowatts during a year. This resulted in great shortages of power and strict rationing. As a rule, the growth of industries is considerably ahead of the growth of electric power output in the USSR.

Until approximately 1935, turbines, generators, transformers, and other equipment for electric power stations were imported, but at the outbreak of the war time the majority of the equipment installed was manufactured in the USSR. Usually, samples of the needed type of equipment were imported from different countries, were inspected and tested by specialists, and then the best one was selected. After certain alterations and changes, the sample became "domestic design" and was adopted for production. The process was very effective. As a rule, the most modern equipment is installed in the USSR, and makes up 80-85 percent of all equipment installed.

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